National Institute of Environmental Health Sciences

Tularemia outbreaks in Kayseri, Turkey: An evaluation of the effect of climate change and climate variability on tularemia outbreaks

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Abstract:

Objectives: The aim of this study was to evaluate the epidemiological characteristics of tularemia outbreak and the effect of climate variability on this outbreak in Kayseri. Methods: The outbreak places, infection dates, source of infection, and the number of cases were recorded and analyzed. This information was obtained from the Regional Public Health Department. Climate data were supplied by the Regional Meteorological Service. Results: The first case in Sariz was recorded in 2005. Thereafter, 2 cases were reported in 2006 and 1 case in 2007. During 2010, 21 cases were recorded in 7 towns, 62 cases in 2011 and 27 cases in 2012. A total number of 110 cases were recorded in 12 out of 16 towns in Kayseri Province between 2010 and 2012. The majority of cases were seen in the north-eastern, east and south-eastern parts of Kayseri Province; located in higher altitudes (over 1000. m from sea level). It was accepted that the outbreak was originated from water sources and was confirmed by few number of water samples collected from outbreak areas. Considering climate variations, the outbreak occurred between 1988 and 2009 during a dry, low humid, high temperature period after rainy season. Conclusion: A tularemia outbreak was observed between 2010 and 2012 with the initiation of rainy years. High temperature for a long period accompanied by low rainfall and low humidity may affect the vector's biology and initiate a tularemia outbreak in high plateaus in Kayseri Province and around.

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Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Ecosystem Changes, Meteorological Factors, Precipitation, Temperature

Temperature: Fluctuations

Geographic Feature:

resource focuses on specific type of geography

None or Unspecified

Geographic Location:

resource focuses on specific location

Non-United States

Non-United States: Europe

European Region/Country: European Country

Other European Country : Turkey

Health Impact:

specification of health effect or disease related to climate change exposure

Infectious Disease

Infectious Disease: Zoonotic Disease

Zoonotic Disease: Tularemia

Resource Type:

format or standard characteristic of resource

Research Article

Timescale:

time period studied

Time Scale Unspecified